



**OU1 Design Change and Modification Sheet:
Change/Modification # 40**

This form is used to document changes and modification to the approved plans.

This form will be kept with the official Quality Control Site Plan.

Date Initiated: 7/17/12

Date Executed: 7/19/12

Property ID: _____ Operable Unit 1, Area 1

Design Change / Modification Description:

Reference Sheet C6A, Titled OU1-Remedial Action, Proposed Final Grading and Restoration Plan (Search and Rescue Area). As the result of unseasonably heavy rains the drainage system was overwhelmed and a portion of the new City Services Road flooded. The portion of the road which flooded is by design the low point in the road. There are two rock trench drains in this area. One on either side of the roadway. Both of the drains were built as designed (see attached detail sheet) but failed to be capable of handling the volume of water which resulted from the event, thereby allowing the road to flood. On July 17, 2012, the City of Libby formally requested help from the EPA to correct the issue. A determination was made that the drains had to be significantly deepened to facilitate a greater volume of water. The west drain was dug to a depth of approximately 8' at which point ground water was encountered. The width of the drain was increased to a width of approximately 14', with the length remaining at the design length of 20'. The smaller drain on the east side of the road was excavated to a depth of 6' and to width of approximately 5', the length remained as designed at 10'. The small drain's close proximity to the roadway prohibited further widening or deepening of the excavation. A marker barrier was installed as prescribed. The excavation(s) back filled with a combination of 3-6" rock with a 1 1/2" washed rock cap. Filter fabric was installed to prevent premature sedimentary clogging of the drain, and the rock inlet was ringed with straw wattle as a sedimentary barrier. Additionally a broad swell was created as an overflow from the west drainage structure to the adjacent property to the west as approved by the City of Libby.

See attached drawing(s) for location of drains/flooding and the designed rock trench detail.

Changes marked on Quality Control Plans? Yes X No _____

Signatures:

Approved:

USACE or EPA: _____

Date: 8-14-12

City of Libby: Jim Hammone

Date: 8/14/2012

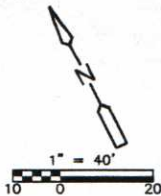
Acknowledged:

CQC: _____

Date: 8/14/12

TQA: for Salvo

Date: 8/14/12



NOTES:

1. LEGEND INCLUDED IN SHEET C6.
2. ROAD ALIGNMENT AND ELEVATIONS PROVIDED BY WGM GROUP, MISSOULA, MONTANA.

DAVIS CONTROL
5/8 REBAR "7322S"
N 1569086.3404
E 500017.1824
ELEV: 2065.71

TIE TO EXISTING GRADE
AT MAX 5% SLOPE

PROPERTY LINE
(APPROXIMATE)

SEARCH AND RESCUE
BUILDING

DAVIS CONTROL
5/8 STEEL PIN
N 1568889.3481
E 499888.4295
ELEV: 2066.74

ADJUST VALVE BOX TO
FINISHED GRADE

APPROX. AREA OF
FLOODING

ROCK DRAINS

20 LF ROCK TRENCH
DITCH INV 64.25

10 LF ROCK TRENCH
DITCH INV 65.00

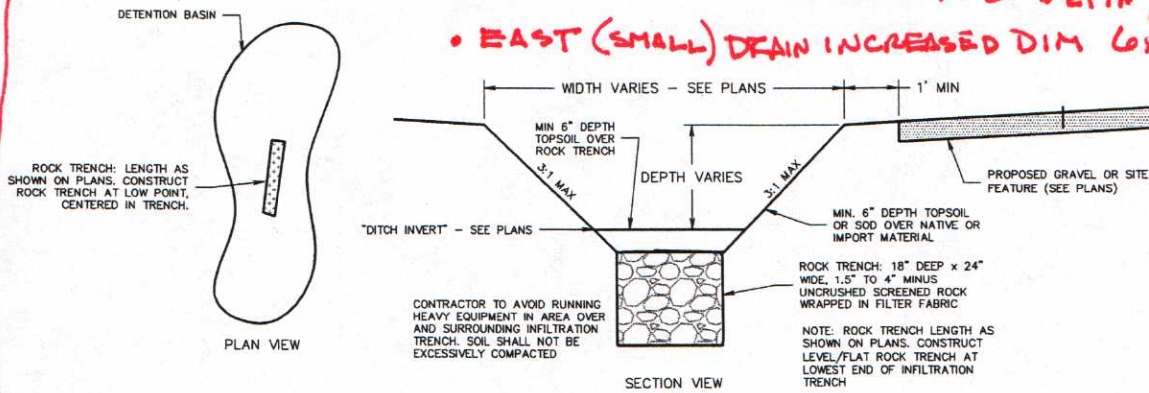
MATCH LINE SHEET C6A

MATCH LINE SHEET C6B

450 PI STA 8+24.46

PORTION OF SHIT C6A

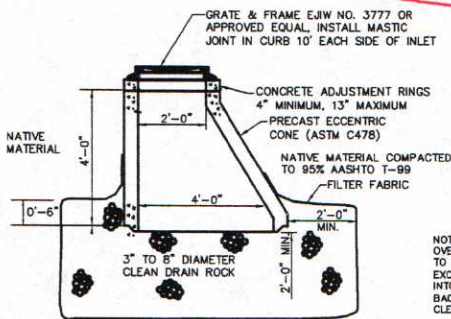
- WEST (LARGE) DRAIN INCREASED DIM. 14' x 20' x 8' DEPTH
- EAST (SMALL) DRAIN INCREASED DIM 6' x 10' x 6' DEPTH



TYPICAL DETENTION BASIN/ROCK TRENCH

DETAIL

NTS




TYPICAL SUMP DETAIL

DETAIL

NTS



Revisions			
Symbol	Descriptions	Date	Approved
REV.1	PROJECT REVIEW COMMENTS	8/30/11	GM

CDM Federal Programs Corporation		 US ARMY CORPS OF ENGINEERS OMAHA DISTRICT RAPID RESPONSE PROGRAM	
Designed by: WGM GROUP, MISSOULA, MT	LIBBY ASBESTOS PROJECT LIBBY, MONTANA		
Drawn by: K. HUFFSMITH	US EPA Region VIII Denver, Colorado		
Checked by: G. MCKENZIE	OU1-REMEDIAL ACTION WGM DETAILS		
Submitted by: G. MCKENZIE	Scale: FEBRUARY 2012	Sheet number: D2	Plot Scale: Design File: File R:\Libby_OU1\OU1\September 2011 No.1.dwg\02 WGM DESIGN DETAILS.dwg



1) VIEW OF THE FLOODED PORTION OF CITY SERVICES ROAD



2) COMPLETION OF SMALL/EAST DRAINAGE STRUCTURE



3) ENLARGEMENT OF SMALL/EAST DRAINAGE STRUCTURE



4) LARGE / WEST DRAINAGE STRUCTURE AND SWALE , MARKER BARRIER PLACEMENT



5) LARGE / WEST DRAINAGE STRUCTURE COMPLETION